

Date: Wednesday, 4/5/2006 3:24:05 PM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : SKIDTUBE MATERIAL  
 Job Number : 26547  
 Estimate Number : 10489  
 P.O. Number : *N/A* Part Number : D6013047  
 This Issue : 4/5/2006 S.O. No. : *N/A* Drawing Number : D6013 REV A  
 Prsht Rev. : NC Project Number : *N/A*  
 First Issue : *N/A* Type : PURCHASED PARTS Drawing Revision : A  
 Previous Run : 23935 Material : *N/A*  
 Due Date : 4/28/2006 Qty: *129* Um: *50* Each  
 Written By : *[Signature]*  
 Checked & Approved By : *[Signature]* 06.04.06  
 Comment : Est A 05.08.01 New issue KJ/JLM

## Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

1.0

PG

PURCHASING



Comment: PURCHASING

Issue P/O: *982*

a) Extrude as per Dwg D6013

b) Material: 7075-T73/T73510/T73511 (QQ-A-200/11) Seamless Aluminum Tube

c) Minimum ultimate tensile strength = 66 ksi

d) Minimum tensile yield strength = 56 ksi

Possible Supplier: Aluminum Works

Material certification is required

*C206104110**50 129**137*

2.0

D6013047P

SKIDTUBE MATL



Comment: Qty.: 1.0000 Each(s)/Unit Total : 50.0000 Each(s)

SKIDTUBE MATERIAL

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect For Transit Damage

Ensure material certification is attached

*PV 4/8/06 60 77 137*

4.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6006

*50 206110114 X-137*

W/O:		WORK ORDER CHANGES						
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 4/5/2006 3:24:06 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE MATERIAL

Job Number: 26547

Part Number: D6013047

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

N/A

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

N/A

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

C Log 10/1/16 (137)

8.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

R 207/01/09

Job Completion



C Log 10/1/16

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

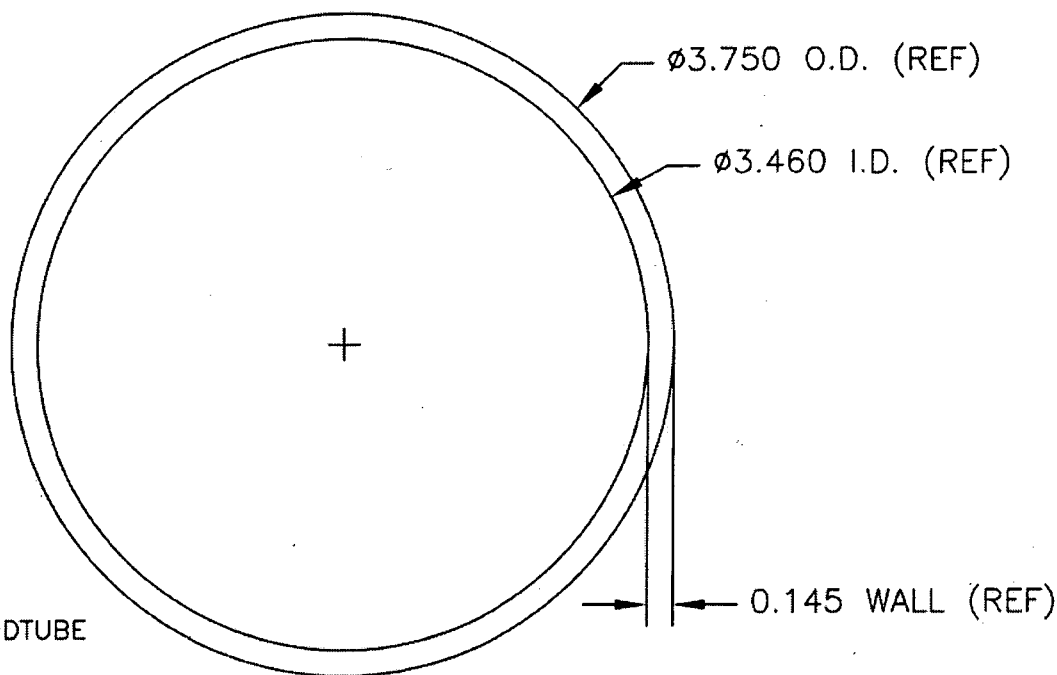
NOTE: Date & initial all entries

**DART**

DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6013	REV. A SHEET 1 OF 1
DATE 05.03.18		TITLE SKIDTUBE MATERIAL	SCALE 1:1
A	05.03.18	NEW ISSUE	

**RELEASED**  
05-08-09 [Signature]

## SPECIFICATION CONTROL DRAWING



### NOTES

- 1) D6013-XXX SKIDTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 47" LONG TUBE: D6013-047

- 2) MATERIAL: 3.750 OD x 0.145 WALL 7075-T73/T73510/T73511 PER QQ-A-200/11 SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 66 ksi  
MINIMUM YIELD TENSILE STRENGTH = 56 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.006$  MEAN ( $\pm 0.015$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.188/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 26547

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**ALUnna**

# Abnahmeprüfzeugnis 3.1 - EN 10204:2004

*Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004***Kunde:** Dart Aerospace Ltd.*Client:*1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada**Zeugnisnummer:** 554/06*Cert No. / No. du certificat:***Bestellnummer:** PO 00000982*Order No. / No. de commande***Auftrag:** 18637/2*Our Reference/Notre Reference:***Produkt:** Rohre nahtlos gepresst und gezogen*Product / Produit:* Tubes seamless extruded and drawn**Spezifikation:** -; AMS - WW - T - 700/7B; -; -; -*Specification:***Werkstoff:** 7075*Alloy/Alliage:***Zustand:** T 73*Temper/État***Abmessung** 3,750 INCH x 3,460 INCH x 0,145 INCH x 47,000 INCH*Size / Dimension* D6013-047 3.750 X 0.145 X 47**Kennzeichnung** ALUnna - Cert No. 554/06 - 7075 - T 73 - Cast No. ....- AMS - WWT 700/7B - 3.750" OD X 0.145" Wall - Heat No.*Marking/Marquage:* 472/06 - Lot 18637/2-1 PO. 00000982**Lieferung**

pcs.

lbs

**Country of Manufacture: Germany***Delivered Material / Matériel délivre:*

137

1074

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
5673/06	0,112	0,205	1,384	0,041	2,428	0,193	5,805	0,041	0,004	0,0229	0,0001	0,0016	0,0003

**Hydrogen content:** 0,11 ccm/100 g Al

5927/06	0,108	0,200	1,420	0,043	2,507	0,190	5,860	0,036	0,004	0,0191	0,0001	0,0015	0,0002
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**Hydrogen content:** 0,11 ccm/100 g Al

Elements without indication &lt; 0,01 % Cast No. 5927 60 pcs. / Cast No. 5673 77 pcs.

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min. max.	66,0	56,0				
1	75,255	66,990	13,0		169	472/06 - 137 pcs.
2	75,110	66,990	11,5		160	

electrical conductivity: 38% IACS

RMS outside 25 = Ra 0,58 µm - max. 0,37 µm

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

*Test results:*

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

*Resultats:*

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande